THE CLAIMS

Please replace the pending claims with the following amended claims:

1. (Currently amended) A method of assessing pore fluid pressure behaviour in a region of interest in a subsurface formation below an earth surface, the method comprising: determining a stress value representative of formation stress in a measurement region of the subsurface formation that is displaced from the region of interest; and detecting presence of non-hydrostatic pore fluid pressure in the region of interest using the stress value;

wherein detecting presence of non-hydrostatic fluid pressure comprises detecting a precursor zone wherein the pore fluid pressure is hydrostatically determined and a stress gradient increases.

2. (Original) The method of claim 1, wherein detecting presence of non-hydrostatic fluid pressure comprises detecting a pressure boundary wherein the pore fluid pressure changes from hydrostatic to non-hydrostatic.

3. (Canceled)

4. (Original) The method of claim 1, wherein the fluid pressure in the measurement region is hydrostatic.

5. (Original) The method of claim 1, wherein the measurement region of the subsurface formation is located less deep as seen from the earth surface than the region of interest.

6. (Original) The method of claim 1, wherein using the stress value for detecting non-hydrostatic pore fluid pressure in the region of interest comprises inferring an effective stress value representative of the difference between the formation stress in the measurement region and a value of pore fluid pressure in the measurement region.

7. (Original) The method of claim 1, wherein detecting non-hydrostatic pore fluid pressure in the region of interest comprises using a geo-mechanical model of the subsurface formation.

8. (Original) The method of claim 1, wherein determining the stress value comprises determining a principal stress value representative of the horizontal formation stress in the measurement region.

9. (Original) The method of claim 1, wherein determinng the stress value comprises performing a geophysical measurement, such as a seismic measurement or a sonic measurement, to obtain geophysical data, and processing the geophysical data to obtain the stress value.

10. (Original) The method of claim 1, wherein determining the stress value comprises determining two or more stress values each at a different depth in the measurement region.

11. (Original) The method of claim 10, further comprising inferring effective stress values for each of the stress values, which effective stress values are representative of the difference between the formation stress at the corresponding depths in the measurement region and the value of the pore fluid pressure at substantially the same depth in the measurement region.

12. (Original) The method of claim 11, further comprising inferring a variation of the two or more effective stress values as a function of their depths and comparing to a nominal value.

13. (Original) The method of claim 1, wherein prior to assessing pore fluid pressure behaviour in the region of interest: a drill bit is provided on a lower end of a drill string; and the lower end of the drill string is lowered in a bore hole in the subsurface formation, and wherein during assessing the pore fluid pressure behaviour in the region of interest: the drill bit is operated to deepen the hole.

14. (Currently amended) A system for assessing pore fluid pressure behaviour in a region of interest in a subsurface formation below an earth surface, the system comprising: a measurement arrangement for producing a signal representing a stress value representative of the formation stress in a measurement region of the subsurface formation; and a signal processing device arranged to receive the signal and utilize the signal to detect presence of non-hydrostatic pore fluid pressure in the region of interest, which region of interest is located displaced from the measurement region;

wherein the signal processingn device detects presence of non-hydrostatic fluid pressure by detecting a precursor zone wherein the pore fluid pressure is hydrostatically determined and a stress gradient increases.

15. (Original) The system of claim 14, wherein the measurement system includes at least a measurement-while-driling device that is installable on a drill pipe for lowering into a bore hole such that the measurement-while-drilling device can reach or approach the measurement region.

16. (Original) The method of claim 5, wherein the measurement region of the subsurface formation is located above the region of interest.

17 (Previously presented) The method of claim 1 wherein the region of interest is ahead of the measurement region.